AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for obtaining a pluripotent human blastocyst-derived stem cell line comprising:

i) using a fertilized human oocyte of grade 1 or 2 to obtain a human blastocyst of grade A or B;

ii) co-culturing the human blastocyst with feeder cells to establish one or more colonies of inner cell mass cells;

iii) isolating the inner cell mass cells by mechanical dissection; and

iv) co-culturing ~~of~~ the inner cell mass cells with feeder cells to obtain a pluripotent human blastocyst-derived stem cell line.

2. (Currently Amended) A method for obtaining a pluripotent human blastocyst-derived stem cell line comprising:

i) using a fertilized human oocyte of grade 1 or 2 to obtain a human blastocyst;

ii) co-culturing the human blastocyst with feeder cells to establish one or more colonies of inner cell mass cells;

iii) isolating the inner cell mass cells by mechanical dissection; and

iv) co-culturing the inner cell mass cells with feeder cells to obtain a pluripotent human blastocyst-derived stem cell line.

3. (Currently Amended) A method for obtaining a pluripotent human blastocyst-derived stem cell line comprising:

i) using a fertilized human oocyte to obtain a human blastocyst of grade A or B;

ii) co-culturing the human blastocyst with feeder cells to establish one or more colonies of inner cell mass cells;

iii) isolating the inner cell mass cells by mechanical dissection; and

iv) co-culturing the inner cell mass cells with feeder cells to obtain a pluripotent human blastocyst-derived stem cell line.

4. (Currently Amended) A method for obtaining a pluripotent human blastocyst-derived stem cell line comprising:

i) using a fertilized human oocyte optionally of grade 1 or 2 to obtain a human blastocyst of optionally grade A or B;

ii) co-culturing the human blastocyst with feeder cells to establish one or more colonies of inner cell mass cells,

iii) isolating the inner cell mass cells by mechanical dissection,

iv) co-culturing the inner cell mass cells with feeder cells to obtain a pluripotent human blastocyst-derived stem cell line; and

v) ~~propagation of~~propagating the pluripotent human blastocyst-derived stem cell line by culturing the pluripotent human blastocyst-derived stem cell line ~~stem cells~~ with feeder cells of a density of less than ~~about~~ 60,000 cells per cm^2.

5. (Previously Presented) The method of claim 1, wherein the blastocyst in step i) is a spontaneously hatched blastocyst.

6. (Currently Amended) The method of claim 1, wherein the pluripotent human blastocyst-derived stem cell line is stable.

7. (Currently Amended) The method of claim 1, wherein the pluripotent human blastocyst-derived stem cell line is propagated.

8. (Currently Amended) The method of claim 7, wherein propagating the pluripotent human blastocyst-derived stem cell line comprises passaging the pluripotent human blastocyst-derived stem cell line every 4-5 days.

9. (Currently Amended) The method of claim 7, wherein propagating the pluripotent human blastocyst-derived stem cell line comprises culturing the pluripotent human

blastocyst-derived stem cell line ~~stem cells~~ with feeder cells of a density of less than ~~about~~ 60,000 cells per cm^2.

10. (Currently Amended) The method of claim 9, wherein propagating the blastocyst-derived stem cell line comprises culturing the pluripotent human blastocyst-derived stem cell line ~~stem cells~~ with feeder cells of a density of about 45,000 cells per cm^2.

11. (Currently Amended) The method of claim 7, wherein the propagation of the pluripotent human blastocyst-derived stem cell line in step iv) comprises passage of the feeder cells at the most 3 times.

12. (Previously Presented) The method of claim 1, wherein the zona pellucida of the blastocyst has been at least partially digested prior to step ii).

13. (Currently Amended) The method of claim 12, wherein the zona pellucida of the blastocyst has been at least partially digested with a digestive agent selected from the group consisting of ~~comprising~~ acidic reacting substances, enzymes and mixtures thereof.

14. (Currently Amended) The method of claim 1, wherein at least one of step ii) ~~and/or~~and step iv) is performed in an agent that improves at least one of (a) the attachment of the blastocysts to the feeder cells and (b) the attachment of~~, and/or~~ the inner cell mass cells to the feeder cells.

15. (Previously Presented) The method of claim 14, wherein the agent is a hyaluronic acid.

16. (Currently Amended) The method of claim 1, wherein the feeder cells in at least one of step ii) and step iv) are embryonic feeder cells.

17. (Currently Amended) The method of claim 1, wherein the feeder cells employed in steps ii) and iv) are the same or different and the feeder cells originate from an animal source.

18. (Currently Amended) The method of claim 17, wherein the feeder cells of at least one of step ii) and step iv) are of mouse or human origin.

19. (Currently Amended) The method of claim 1, wherein the feeder cells of at least one of step ii) and step iv) are mitotically inactivated.

20. (Currently Amended) The method of claim 1, wherein the pluripotent human blastocyst-derived stem cell line

i) exhibits proliferation capacity in an undifferentiated state for more than 21 months when grown on mitotically inactivated embryonic feeder cells;

ii) exhibits normal euploid chromosomal karyotype;

iii) maintains potential to develop into derivatives of all types of germ layers both *in vitro* and *in vivo*;

iv) exhibits at least two of the group of molecular markers consisting of OCT-4, alkaline phosphatase, SSEA-3, SSEA-4, TRA 1-60, TRA 1-81, and the protein core of a keratin sulfate/chondroitin sulfate pericellular matrix proteinglycan recognized by the monoclonal antibody GCTM-2;

v) does not exhibit molecular marker SSEA-1 or other differentiation markers;

vi) retains pluripotency and forms teratomas in vivo when injected into immuno-compromised mice; and

vii) is capable of differentiation.

21. (Canceled).

22. (Withdrawn) The method of claim 1, wherein the stem cell line has the ability of differentiating into an insulin producing cells.

23. (Withdrawn) The method of claim 22, wherein the insulin producing cells form islet-like structures.

24. (Withdrawn) The method of claim 22, wherein the amount of insulin producing β-cells which is derived from the pluripotent human BS cell line is higher than 25%.

25. (Withdrawn) The method of claim 22, wherein the insulin producing cell line produces at least about 300 ng insulin/mg total protein.

26. (Withdrawn) The method of claim 1, wherein the blastocyst-derived stem cells have the ability to differentiate into differentiated cells, which display the expression of pancreatic cell type markers, including at least one of a group consisting of insulin, Glut-2, Pdx-1, glucokinase, glucagons, and somatostatin.

27. (Withdrawn) The method of claim 1, wherein the blastocyst-derived stem cells have the ability to differentiate into insulin-producing cells that organize into islet-like structures comprising an inner core of β-cells surrounded by an outer layer of neuron-type cells, which neuron-type cells display expression of at least one of the following neuronal cell type markers, including neuron-specific β-III tubulin (TUJ1), NeuN, DoubleCortin, tyrosine hydroxylase, and Map 2.

28. (Withdrawn) The method of claim 1, wherein the blastocyst-derived stem cells are capable of differentiated into cells, which express at least one neuronal cell type markers selected from the group consisting of neuron-specific β-III tubulin (TUJ1), NeuN, DoubleCortin, tyrosine hydroxylase, and Map 2.

29. (Withdrawn) A preparation of differentiated cells derived from the blastocyst-derived stem cells obtained by the method of claim 1 for preventing or treating pathologies or diseases caused by tissue degeneration.

30. (Withdrawn) A preparation of differentiated cells derived from the blastocyst-derived stem cells obtained by the method of claim 1 for preventing or treating pathologies or diseases in the pancreas.

31. (Withdrawn) The preparation of differentiated cells of claim 30, wherein the disease is diabetes.

32. (Withdrawn) The preparation of differentiated cells of claim 28, wherein the disease is type 1 diabetes.

33. (Withdrawn) A preparation of differentiated cells derived from the blastocyst-derived stem cell line obtained by the method of claim 1 for preventing or treating pathologies or diseases in the nervous system.

34. (Withdrawn) The preparation of differentiated cells of claim 33, in which the disease is selected from the group consisting of multiple sclerosis, spinal chord injury, an encephalopathy, Parkinson's disease, Huntingdon's disease, stroke, a traumatic brain injury , a hypoxia induced brain injury, an ischemia induced brain injury, a hypoglycemic brain injury, a degenerative disorder of the nervous system, a brain tumor, and a neuropathy in the peripheral nervous system.

35. (Previously Presented) A kit for performing the method of claim 1, comprising human blastocysts with an intact zona pellucida or spontaneously hatched blastocysts, and at least two of the following components in separate compartments: hyaluronic acid, pronase, BS-cell medium, and human or mouse embryonic feeder cells.

36. (Withdrawn) A method for producing an essentially pure preparation of insulin-producing differentiated stem cells, comprising:

i) expanding human blastocyst-derived stem cells by growing the blastocyst-derived stem cells on an inactivated feeder cell layer in a suitable medium;

ii) generating blastocyst-derived stem cell bodies by dissociating colonies formed in step i) into smaller aggregates or individual cells, followed by transferring said aggregates or individual cells in to non-adherent containers wherein said aggregate or individual cells are incubated in a suitable medium;

iii) plating the blastocyst-derived stem cell bodies in containers in a suitable medium;

iv) selecting nestin-positive neural precursors in ITFSn medium;

v) expanding pancreatic endocrine progenitor cells in N2-medium comprising B27 media complement and basic fibroblast growth factor; and

vi) changing the medium to a basic fibroblast growth factor-free N2 medium.

37. (Withdrawn) The method of claim 36, wherein the human blastocyst-derived stem cells are obtained by:

i) using a fertilized oocyte of grade 1 or 2 to obtain a blastocyst of grade A or B;

ii) co-culturing the blastocyst with feeder cells to establish one or more colonies of inner cell mass cells;

iii) isolating the inner cell mass cells by mechanical dissection; and

iv) co-culturing the inner cell mass cells with feeder cells to obtain a blastocyst-derived stem cell line.

38. (Withdrawn) The method of claim 36, wherein the medium used in step i) is human blastocyst-derived stem cell medium.

39. (Withdrawn) The method of claim 36, wherein the medium used in step ii) is blastocyst-derived stem cell body medium.

40. (Withdrawn) The method of claim 36, wherein the medium used in step iii) is blastocyst-derived stem cell body medium.

41. (Withdrawn) The method of claim 36, wherein nicotinamide is added after step vi).

42. (Withdrawn) An essentially pure preparation of differentiated stem cells, wherein said stem cells display an expression of pancreatic cell type markers wherein said marker is at least one or more of insulin, Glut-2, Pdx-1, glucokinase, glucagons, or somatostatin.

43. (Withdrawn) The preparation of claim 42, which is capable of producing at least about 320 ng insulin/mg total protein.

44. (Withdrawn) The preparation of claim 42, wherein the preparation comprises at least 25% insulin producing cells.

45. (Withdrawn) The preparation of claim 42, wherein said stem cells are organized into islet-like structures comprising an inner core of β-cells surrounded by an outer layer of neuron-type cells, wherein the neuron-type cells express at least one of the neuronal cell type markers selected from the group consisting of: neuron-specific β-III tubulin (TUJ1), NeuN, DoubleCortin, tyrosine hydroxylase, and Map 2.

46. (Withdrawn) The preparation of claim 42, obtained by:

i) expanding human blastocyst-derived stem cells by growing the blastocyst-derived stem cells on an inactivated feeder cell layer in a suitable medium;

ii) generating blastocyst-derived stem cell bodies by dissociating colonies formed in step i) into smaller aggregates or individual cells, followed by transferring said aggregates or individual cells in to non-adherent containers wherein said aggregate or individual cells are incubated in a suitable medium; and

iii) plating the blastocyst-derived stem cell bodies in containers in a suitable medium;

iv) selecting nestin-positive neural precursors in ITFSn medium;

v) expanding pancreatic endocrine progenitor cells in N2-medium comprising B27 media complement and basic fibroblast growth factor; and

vi) changing the medium to a basic fibroblast growth factor-free N2 medium.

47. (Withdrawn) An essentially pure preparation of differentiated stem cells, wherein the stem cells express at least one of the neuronal cell type markers selected from the group consisting of: neuron-specific β-III tubulin (TUJ1), NeuN, DoubleCortin, tyrosine hydroxylase, or Map 2.

48. (Withdrawn) The preparation of claim 47 obtained by:

i) expanding human blastocyst-derived stem cells by growing the blastocyst-derived stem cells on an inactivated feeder cell layer in a suitable medium;

ii) generating blastocyst-derived stem cell bodies by dissociating colonies formed in step i) into smaller aggregates or individual cells, followed by transferring said aggregates or

individual cells in to non-adherent containers wherein said aggregate or individual cells are incubated in a suitable medium; and

iii) plating the blastocyst-derived stem cell bodies in containers in a suitable medium;

iv) selecting nestin-positive neural precursors in ITFSn medium;

v) expanding pancreatic endocrine progenitor cells in N2-medium comprising B27 media complement and basic fibroblast growth factor; and

vi) changing the medium to a basic fibroblast growth factor-free N2 medium.

49. (Withdrawn) An essentially pure preparation of stem cells obtained by:

i) expanding human blastocyst-derived stem cells by growing the blastocyst-derived stem cells on an inactivated feeder cell layer in a suitable medium;

ii) generating blastocyst-derived stem cell bodies by dissociating colonies formed in step i) into smaller aggregates or individual cells, followed by transferring said aggregates or individual cells in to non-adherent containers wherein said aggregate or individual cells are incubated in a suitable medium; and

iii) plating the blastocyst-derived stem cell bodies in containers in a suitable medium;

iv) selecting nestin-positive neural precursors in ITFSn medium;

v) expanding pancreatic endocrine progenitor cells in N2-medium comprising B27 media complement and basic fibroblast growth factor; and

vi) changing the medium to a basic fibroblast growth factor-free N2 medium.

50. (Withdrawn) An essentially pure preparation of differentiated stem cells of claim 42 for preventing or treating pathologies or diseases in the pancreas.

51. (Withdrawn) The preparation of claim 50, wherein the disease is diabetes.

52. (Withdrawn) The preparation of claim 50, wherein in which the disease is type 1 diabetes.

53. (Withdrawn) The preparation of claim 47 for treating pathologies or diseases in the nervous system.

54. (Withdrawn) The preparation of claim 53, wherein the disease is selected from the group consisting of multiple sclerosis, spinal chord injury, an encephalopathy, Parkinson's disease, Huntingdon's disease, stroke, a traumatic brain injury, a hypoxia induced brain injury, an ischemia induced brain injury, a hypoglycemic brain injury, a degenerative disorder of the nervous system, a brain tumor, and a neuropathy in the peripheral nervous system.

55. (Withdrawn) A kit for performing the method of claim 36 comprising at least two of the following components in separate compartments: mitomycin C, hBS medium, BS cell body medium, ITSFn-medium, N2-medium, B27-media supplement, nicotinamide, and bFGF.

56. (Withdrawn) The kit of claim 55, further comprising an essentially pure human blastocyst-derived stem cell line obtained by:

i) using a fertilized oocyte of grade 1 or 2 to obtain a blastocyst of grade A or B;

ii) co-culturing the blastocyst with feeder cells to establish one or more colonies of inner cell mass cells;

iii) isolating the inner cell mass cells by mechanical dissection; and

iv) co-culturing the inner cell mass cells with feeder cells to obtain a blastocyst-derived stem cell line.

57. (Currently Amended) The method of claim 1 further comprising propagating the pluripotent human blastocyst-derived stem cell line.

58. (Currently Amended) The method of claim 2 further comprising propagating the pluripotent human blastocyst-derived stem cell line.

59. (Currently Amended) The method of claim 3 further comprising propagating the pluripotent human blastocyst-derived stem cell line.

60. (Currently Amended) The method of claim 9, wherein the ~~step of culturing uses~~ feeder cells are at a density of less than ~~about~~ 55,000 cells per cm^2.

61. (Currently Amended) The method of claim 9, wherein the ~~step of culturing uses~~ feeder cells are at a density of less than ~~about~~ 50,000 cells per cm^2.

62. (New) The method of claim 1, wherein the feeder cells of step ii) and step iv) are human or mouse embryonic feeder cells.

63. (New) The method of claim 62, wherein the feeder cells of step ii) and step iv) are human or mouse embryonic fibroblasts.

64. (New) The method of claim 63, wherein the feeder cells of step ii) and step iv) are human embryonic fibroblasts.

65. (New) The method of claim 63, wherein the feeder cells of step ii) and step iv) are mouse embryonic fibroblasts.